

### **REASONS FOR ALLOWANCE**

1. The following is an examiner's statement of reasons for allowance:

storing in a database data related to each a plurality of dental patient treatment histories, each including:

an initial data set representing teeth of each dental patient prior to treatment;

an intended dental treatment outcome data set for each dental patient; and

an actual dental treatment outcome data set for each dental patient;

a computer clustering the data into clusters based on at least one of a number of parameters including initial physical dental condition, initial diagnoses, dental treatment parameters, intended dental treatment outcomes, actual dental treatment outcomes, appliance design, manufacturing protocol, clinician, clinician geography, clinician training, size and nature of clinician's practice, and patient demographics;

the computer modeling discrepancies between the intended dental treatment outcome data sets and the actual dental treatment outcome data sets within a particular cluster;

the computer correlating the modeled discrepancies to one or more of treatment approach, appliance design, and manufacturing protocol within the particular cluster; and

the computer providing the correlation as feedback for optimizing the one or more of initial physical dentition condition, initial diagnoses, dental treatment parameters, intended dental treatment outcomes, actual dental treatment outcomes, appliance design, manufacturing protocol, clinician, clinician geography, clinician training, size and nature of clinician's practice, and patient demographics.

In regard to the closest prior art, the Examiner cannot find a prior art reference that contains the features as shown above.

In particular

Chisti et al., U.S. Patent 5,975,893 teaches a system for repositioning teeth comprises a plurality of individual appliances. However, Chisti does not teach the computer correlating the modeled discrepancies to one or more of treatment approach, appliance design, and manufacturing protocol within the particular cluster.

Nor does the Chisti reference teach or suggest a computer implemented method that includes:

storing in a database data related to each a plurality of dental patient treatment histories, each including:

an initial data set representing teeth of each dental patient prior to treatment;

an intended dental treatment outcome data set for each dental patient; and

an actual dental treatment outcome data set for each dental patient;

a computer clustering the data into clusters based on at least one of a number of parameters including initial physical dental condition, initial diagnoses, dental treatment parameters, intended dental treatment outcomes, actual dental treatment outcomes, appliance design, manufacturing protocol, clinician, clinician geography, clinician training, size and nature of clinician's practice, and patient demographics;

the computer modeling discrepancies between the intended dental treatment outcome data sets and the actual dental treatment outcome data sets within a particular cluster;

the computer correlating the modeled discrepancies to one or more of treatment approach, appliance design, and manufacturing protocol within the particular cluster; and

the computer providing the correlation as feedback for optimizing the one or more of initial physical dental condition, initial diagnoses, dental treatment parameters, intended dental treatment outcomes, actual dental treatment outcomes, appliance design, manufacturing protocol, clinician, clinician geography, clinician training, size and nature of clinician's practice, and patient demographics.

Chisti et al., U.S. Patent 6,471, 511 teaches methods and corresponding apparatus for segmenting an orthodontic treatment path into clinically appropriate substeps for repositioning the teeth of a patient. However, Chisti does not teach the computer correlating the modeled discrepancies to one or more of treatment approach, appliance design, and manufacturing protocol within the particular cluster.

Jordan, U.S. Pre-Grant Publication 2003/ 0163291 teaches a selecting based on selection criteria used to search a database including parameters defining such predefined and existing orthodontic brackets. However, Jordan does not teach the computer correlating the modeled discrepancies to one or more of treatment approach, appliance design, and manufacturing protocol within the particular cluster.

Sachdeva et al., U.S. Patent 6,540,512 teaches a method and apparatus for treating an orthodontic patient include processing that begins by generating digital information regarding the orthodontic patient by a site orthodontic system. However, Sachdeva does not teach the computer correlating the modeled discrepancies to one or more of treatment approach, appliance design, and manufacturing protocol within the particular cluster.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NEAL R. SEREBOFF whose telephone number is (571)270-

1373. The examiner can normally be reached on Mon thru Thur from 7:30am to 5pm, with 1st Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Morgan can be reached on (571) 272-6773. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NRS/  
Examiner  
Art Unit 3626

/C. Luke Gilligan/  
Primary Examiner, Art Unit 3626